

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



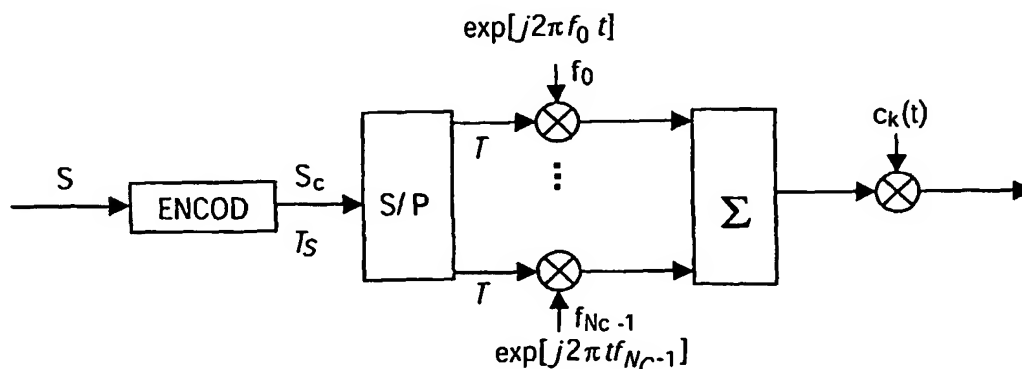
(43) International Publication Date
31 December 2003 (31.12.2003)

PCT

(10) International Publication Number
WO 2004/002038 A1

- (51) International Patent Classification⁷: **H04J 13/04**, 13/00, H04L 5/02
- (74) Agent: **VAN OUDHEUSDEN-PERSET, Laure**; Société Civile SPID, 156 Boulevard Haussmann, F-75008 Paris (FR).
- (21) International Application Number: PCT/IB2003/002910
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 13 June 2003 (13.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 02291578.9 25 June 2002 (25.06.2002) EP
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **BRAJAL, Americo** [FR/PT]; 156 Boulevard Haussmann, F-75008 Paris (FR). **UNAL SAYRAC, Berna** [FR/TR]; 156 Boulevard Haussmann, F-75008 Paris (FR). **LAUER, Ludovic** [FR/FR]; 156 Boulevard Haussmann, F-75008 Paris (FR). **MORLIER, Céline** [FR/FR]; 156 Boulevard Haussmann, F-75008 Paris (FR).
- Published:
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: MT-CDMA USING SPREADING CODES WITH INTERFERENCE-FREE WINDOWS



(57) Abstract: The invention relates to digital transmission. It particularly relates to a method of transmitting data using multi-carrier Code -division Multiple Access (CDMA) for accessing a transmission system. The method comprises a step of modulating the data to be transmitted using Orthogonal Frequency- division Multiplexing (OFDM) for producing OFDM modulated data symbols and a step of spreading the OFDM modulated data symbols with spreading codes including a set of predefined sequences, wherein the sequences are predefined so that they satisfy predetermined auto-correlation and/or' cross-correlation criteria within a region around the zero-time offset of the correlation function, defined as an Interference Free Window (IFW).

WO 2004/002038 A1